Charge for the California WaterFix Aquatic Science Peer Review

Background

The Bureau of Reclamation (Reclamation) and the California Department of Water Resources (DWR) coordinate the operation of the Central Valley Project (CVP) and the State Water Project (SWP). As part of the California WaterFix (CWF), DWR proposes to construct and operate new water conveyance facilities in the Sacramento–San Joaquin River Delta, including three intakes, two tunnels, associated facilities, and a permanent head of Old River gate; as well as operate existing south Delta facilities in coordination with these new facilities.

Because the operation of the CVP/SWP is coordinated, Reclamation is the lead agency for the Endangered Species Act (ESA) Section 7 consultation. This consultation is also intended to address consultation with the U.S. Army Corps of Engineers to issue permits pursuant to Rivers and Harbors Act Section 10, Clean Water Act Section 404, and 33 United States Code 408. It is understood that additional consultation on the U.S. Army Corps of Engineers permitting may be required as the CWF is more fully developed.

As noted above, the construction and operation of the new dual conveyance facilities will need to comply with ESA Section 7(a)(2). As part of the CWF ESA consultation, Reclamation and DWR have written a Biological Assessment (BA) that summarizes the effects of the action on ESA-listed species and their designated critical habitats. NOAA's National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service (FWS) are evaluating the effects of the proposed CWF on listed species and their designated critical habitats and are working towards the development of a joint Biological Opinion (BO).

In addition to complying with ESA, DWR intends to obtain California Endangered Species Act (CESA) authorization from the California Department of Fish and Wildlife (CDFW) under Fish and Game Code section 2081(b) for incidental take related to the construction and operation of the CWF and modified operations of the SWP. DWR will submit an application which will include an analysis of the effects of the proposed action on CESA listed species. CDFW will review the CESA-specific analysis of the perceived impacts for state-listed species and may issue a permit if conditions in Fish and Game Code sections 2081(b) and (c) are met.

The purpose of this independent review is to obtain the views of experts not involved in the ESA consultation and 2081(b) permit on the use of the best available scientific information as it pertains to aquatic ESA and CESA listed species (aquatic species) in the development of the NMFS/FWS BO and the CDFW 2081(b) permit.

Panel Charge

The Panel will review 1) the draft BO analytical approach, 2) specific BA analyses (which have been agreed upon by the fisheries agencies and identified in the panel charge), and 3) the approach to analyzing the effects to longfin smelt. Since these items will provide the basis of the joint BO and 2081(b) permit, the review should evaluate whether the items are of sufficient robustness and scientific quality to serve their intended purposes. The Panel members will have at least 30 days to familiarize themselves with the materials. The Panel will also be given relevant background information to consider and will receive presentations from the relevant agencies at the public meeting.

Specific scientific questions for review of the BO analytical approach, specific BA analyses, and longfin smelt analytical approach:

BO Analytical Approach

1. *How well is the analytical approach designed to adequately assess potential responses of the target listed species to the effects of the proposed action (i.e., both direct and indirect effects of the project)? In answering this question, please consider the following:*

    - How well the analytical approach for salmonids incorporates the Viable Salmonid Populations framework presented in McElhany et al. (2000), "Viable Salmonid Populations and the Recovery of Evolutionarily Significant Units", and aligns with viability assessment approaches in Lindley et al. (2007), "Framework for Assessing Viability of Threatened and Endangered Chinook and Steelhead in the Sacramento-San Joaquin Basin".
    - How effectively conceptual models for target aquatic species are incorporated into the analytical approach.
    - How well the analytical approach for target aquatic species explains how the exposure, response, and risk to listed individuals, populations, and diversity groups resulting from project operations will be assessed, and whether quantitative and qualitative methods and risk assessment tools are used appropriately.
    - Whether the approach for assessing effects provides a scientifically defensible approach for evaluating new adverse effects to aquatic species in the north Delta in addition to any changes in adverse effects at existing south Delta facilities, and what improvements could be made.

Supporting Analyses for Target Aquatic Species

2. *How complete are the selected target aquatic species analyses in the BA for evaluating the potential effects of the project on the target listed species? In answering this question, please consider the following:*

    - Whether the appropriate analytical tools (i.e., models) were used for the selected analysis and what, if any, additional currently available tools should be used.
    - Whether assumptions are plainly stated and scientifically sound, and whether analytical uncertainties and limitations of methods in the BA aquatic species analyses and longfin smelt analytical approach are clearly stated.
    - External forcings of climate and sea level are represented by the central tendency (i.e., the "Q5 climate change scenario") of several climate projections for 2030. Whether the assumptions of that characterization are adequately described in the BA. Note what, if any, additional analyses would help to incorporate effects of climate change.
    - How well the analyses incorporate information from existing synthesis reports (e.g., Management Analysis and Synthesis Team, Long-term Operations Biological Opinions reviews, species recovery plans, 2010 State Water Resources Control Board flow criteria report, etc.) and from responses to recommendations of past independent reviews (e.g., BDCP Effects Analysis review and ICF/DWR responses, etc.)
    - How adequately the BA analyses and longfin smelt analytical approach support a scientifically defensible approach for evaluating new adverse effects to aquatic species in the north Delta, and how adequately they support evaluating any changes in effects at existing south Delta facilities. Note what, if any, additional or alternative analyses are needed.
    - How well the longfin smelt analytical approach supports evaluation of combined project operations effects on the target listed species.